2002 Annual Drinking Water Quality Report

Moore County Department of Public Utilities
Addor Water System - PWSID No. 03-63-153
June 21, 2003

We're pleased to provide you with this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide to you a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you this information.

Special Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline (800-426-4791)**.

What affects water quality?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Is it safe to drink?

We're reporting that our drinking water meets most federal and state requirements. EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

From where does my water come?

We purchase our water from the Town of Southern Pines, which is fully treated surface water from Drowning Creek. The interconnection is located on Addor Road near US 1 Highway.

What if I have any questions or would like to become more involved?

If you have any questions about this report or concerning your water utility, please contact **Ben Vaughn at (910) 947 - 6315.** We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first Monday of each month at 2:00 p.m., and the third Monday of each month at 6:00 p.m. in the Commissioners' Meeting Room, Second floor - Historic Courthouse, Courthouse Circle, Carthage, North Carolina.

Water Quality Data Table of Detected Contaminants

We routinely monitor for over 121 substances in your drinking water according to Federal and State laws. The following tables lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables is from testing done January 1st to December 31st, 2002. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentration of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Important Drinking Water Definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years, or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Parts per trillion (ppt) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Maximum Contaminant Level - "Maximum Allowed" (MCL) is the highest level of a substance that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal - The "Goal"(MCLG) is the level of a substance in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

DETECTED SUBSTANCES TEST RESULTS

Substance	Violation Y/N	Your Water	Units	MCLG	MCL	Likely Source of Contamination
Turbidity – regulated at the Southern Pines Water Plant – 2002						
Turbidity	N	0.29 100%	NTU	N/A	TT = 5 NTU TT = Percentage of samples < 0.5 NTU	Soil runoff
Radiological Substances – regulated at the user's tap – 2002						
Beta/photon emitters	N	11.80	pCi/l	0	50	Decay of natural and man-made deposits
Inorganic Substances – regulated at the Southern Pines Water Plant – 2002						
Contaminant (units)	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	N	0.98	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Nitrate (ppm)	N	0.21	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Copper & Lead – regulated at the user's tap

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90^{th} percentile)	2002	0.265	0	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90^{th} percentile)	2002	121	1	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits

This table shows that our system had problems in 2002 with **Lead**. Materials used in the construction of the distribution system are lead-free. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. Infants and young children are typically more vulnerable to **lead** in drinking water than the general population. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Infants and children who drink water-containing **lead** in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. **Lead** in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced. **Additional information in reference to lead is available from the Safe Drinking Water Hotline (1-800-426-4791).**

Total Trihalomethanes Substances – regulated at the user's tap – 2002

Contaminant (units)	MCL Violation Y/N	Your Water	MCL G	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	Y	129.25 AVG. RANGE : 48.3 - 349	N/A	100	By-product of drinking water chlorination

This table shows that our system had problems in 2002 with **Total Trihalomethanes**. Compliance is based upon a running annual average. The violation has remained in effect from December 11, 2002 to present. Some people who drink water-containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. We have reduced the Total Trihalomethanes concentration in our drinking water by increasing the frequency of our effective flushing program. Total Trihalomethanes concentrations in chlorinated drinking water increase as residence time of water increases. In other words, as more water is used, the Total Trihalomethanes concentration should decrease. Effective flushing of the distribution system takes place on a weekly basis. Also, we have no control over the water provided to us by the Town of Southern Pines. We are supposed to be purchasing fully treated drinking water that meets EPA and State requirements. We have expressed our concerns and water quality data with the Town of Southern Pines and with the North Carolina Department of Environment and Natural Resources in reference to this water quality issue. Engineers for the Town of Southern Pines are supposedly addressing Disinfection By-product formation in the plans and specifications for their water treatment plant expansion. The Town of Southern Pines has chosen to not make changes to water treatment at the present time. We will continue to monitor Total Trihalomethanes concentration very closely by collecting required samples and flushing the distribution system as necessary. **Additional information in reference to Total Trihalomethanes is available from the Safe Drinking Water Hotline (1-800-426-4791).**

Secondary contaminants, required by the NC Public Water Supply Section, are substances that affect the taste, odor and/or color of drinking water. These aesthetic contaminants normally do not have any health effects and normally do not affect the safety of your water.

Water Characteristics – regulated at the Southern Pines Water Plant – 2002

Parameter (units)	Your Water Annual Avg.	Secondary MCL
Alkalinity (ppm)	11.8	N/A
Carbon Dioxide (ppm)	6.9	N/A
Chloride (ppm)	12	250
Color (color units)	4.2	15
Hardness (ppm)	29.4	N/A
Iron (ppm)	0.09	0.3
Manganese (ppm)	0.011	0.05
Orthophosphate (ppm)	0.61	N/A
pH (pH units)	8.6	6.5-8.5
Total Organic Carbon (TOC), % removal	59.1	45 - 55%

List of All Required Contaminants

Testing requirements and frequencies are based on type of water used, size of population, purchase system versus non-purchase systems, detection of a contaminant, state-wide sampling waivers, previous sampling history--reduced monitoring permission, etc.

Regulated Contaminants--have an allowable limit (Maximum Contaminant Level {MCL}))

Microbiological--every month

Total Coliform | Fecal/E. Coli--as needed | Turbidity--certain systems--every 4 hours

Radiological--every 4 years

Gross Alpha | Gross Beta--certain systems | Combined Radium--as needed

Inorganics--certain systems--every year or every 3 years or every 9 years

Antimony | Barium | Cadmium | Cyanide | Mercury | Thallium
Arsenic | Beryllium | Chromium | Fluoride | Selenium
Nitrate--certain systems--every year | Nitrite--certain systems--one time | Asbestos--certain systems--every 9 years
Lead and Copper--every 6 months or every year or every 3 years

Total Trihalomethanes--certain systems--every quarter or every year

Chloroform | Bromoform | Chlorodibromomethane | Bromodichloromethane
(These 4 contaminants results added together equal the Total Trihalomethanes)

Synthetic Organic Chemicals (SOCs) including pesticides and herbicides--certain systems--every quarter or every year or every 3 years

2,4-D | 2,4,5-TP (Silvex) | Alachlor | Atrazine | Benzo(a)pyrene(PAH)
Carbofuran | Chlordane | Dalapon | Di(2-ethyhexyl)adipate | Di(2-ethyhexyl)phthalate
Dineseb | Endrin | Heptachlor | Heptachlor epoxide | Hexachlorobenzene
Lindane | Methoxychlor | Oxamyl (Vydate) | Pentachlorophenol | Hexachlorocyclo-pentadiene
Simazine | Picloram | Toxaphene | Polychlorinated biphenyls(PCBs)
Dibromochloropropane(DBCP)--certain systems | Ethylene dibromide (EDB)--certain systems
Acrylamide--certain systems | Epichlorohydrin--certain systems
Diquat--State-wide waiver | Endothall--State-wide waiver
Glyphosate--State-wide waiver | Dioxin (2,3,7,8-TCDD)--certain systems

Volatile Organic Chemicals(VOCs)--certain systems--every quarter or every year or every 3 years

Benzene | Carbon tetrachloride | Chlorobenzene | o-Dichlorobenzene | p-Dichlorobenzene
1,2-Dichloroethane | 1,1-Dichloroethylene | cis-1,2-Dichloroethylene | trans-1,2-Dichloroethylene | Dichloromethane
1,2-Dichloropropane | Ethylbenzene | Stryene | Tetrachloroethylene | Toluene
Vinyl Chloride | 1,1,2-Trichloroethane | Trichloroethylene | Total Xylenes
1,2,4-Trichlorobenzene | 1,1,1-Trichloroethane

Unregulated Contaminants--no allowable limit (MCL)

Unregulated Inorganics--certain systems--every year or every 3 years or every 9 years

Sulfate

Unregulated SOCs--certain systems--every quarter or every year or every 3 years

Aldicarb | Aldicarb sulfone | Aldicarb sulfoxide | Aldrin | Butachlor
Carbaryl | Dicamba | Dieldrin | 3-Hydroxycarbofuran | Methomyl
Metolachlor | Metribuzin | Propachlor

Unregulated VOCs--certain systems--every quarter or every year or every 3 years

Chloroform | Bromoform | Bromodichloromethane | 1,3,5-Trimethylbenzene
Chlorodibromomethane | Bromobenzene | Bromochloromethane | 1,2,3-Trichlorobenzene
Bromomethane | n-Butylbenzene | sec-Butylbenzene | 1,2,3-Trichloropropane
tert-Butylbenzene | Chloroethane | Chloromethane | 1,2,4-Trimethylbenzene
o-Chlorotoluene | p-Chlorotoluene | Dibromomethane | n-Propylbenzene
m-Dichlorobenzene | Dichlorodifluoromethane | 1,1-Dichloroethane | 1,1,2,2-Tertachloroethane
1,3-Dichloropropane | 2,2-Dichloropropane | 1,1-Dichloropropene | 1,1,1,2-Tertachloroethane
1,3-Dichloropropene | Fluorotrichloromethane | Hexachlorobutadiene | Isopropylbenzene
p-Isopropyltoluene | Naphthalene

Total Haloacetic Acids--certain systems—every quarter or every year

Monochloroacetic Acid | Dichloroacetic Acid | Trichloroacetic Acid | Monobromoacetic Acid | Dibromoacetic Acid
(These 5 contaminants results added together equal the Total Haloacetic Acids)

Secondary Contaminants/Water Characteristics--certain systems--every year or every 3 years or every 9 years

Iron--has MCL Manganese--has MCL Nickel--no MCL Sodium--no MCL pH--has a range

We, at Moore County Department of Public Utilities, work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children’s future. Please call our office if you have questions.